ARTIFICIAL INTELLIGENCE AND ENTREPRENEURSHIP IN THE IMPHAL VALLEY: ATTITUDINAL INSIGHTS ACROSS DEMOGRAPHICS

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ISSN 2277-7733
Volume 15 Issue 2,
September 2026

Abstract

This study investigates the attitudes toward artificial intelligence (AI) among entrepreneurs in the Imphal Valley region of Manipur, India. Using a cross-sectional descriptive survey design, data were collected from 384 entrepreneurs through the Artificial Intelligence Attitude Scale (Aktay, 2024). The analysis explored overall attitudes and differences across demographic variables such as gender, age, locality, and educational qualification. Findings revealed that entrepreneurs generally held positive attitudes toward AI. While no significant differences were observed based on gender, age, or locality, educational qualification was found to significantly influence AI attitudes, with more educated participants showing more favorable perceptions. The study highlights the need for targeted AI literacy and support programs to ensure inclusive technological growth in regional entrepreneurial ecosystems.

Keywords: *Artificial Intelligence, Entrepreneurs, Attitude, Manipur, Education*

The rapid advancement of artificial intelligence (AI) technologies is transforming industries worldwide, significantly impacting entrepreneurship, innovation, and decision-making processes (Russell & Norvig, 2021). Entrepreneurs, as drivers of economic activity and technological adoption, play a critical role in shaping how AI is perceived and integrated into small and medium enterprises (SMEs), particularly in emerging economies. Understanding their attitudes toward AI is vital for effective technology diffusion and policy formulation.

In the context of India's north-eastern region, especially Manipur's Imphal Valley, the entrepreneurial ecosystem is marked by a mix of traditional business practices and emerging tech-driven opportunities. However, limited research exists on how local entrepreneurs view the risks, benefits, and practical uses of AI. Since attitudes can influence readiness for adoption and innovation behavior (Venkatesh et al., 2003), exploring these perceptions is essential for tailored interventions and inclusive digital transformation.

This study seeks to examine the attitudes toward AI among entrepreneurs in the Imphal Valley region, considering demographic factors such as age, gender, locality, and educational qualification. The findings aim to provide insight into the socio-psychological and educational factors that influence AI acceptance in a region with unique socio-economic and cultural dynamics.

Rationale of the Study

Artificial Intelligence (AI) is rapidly transforming the global entrepreneurial landscape, offering tools that enhance productivity, decision-making, and customer engagement. In India, the integration of AI technologies in business is gaining momentum, particularly among micro, small, and medium enterprises (MSMEs). However, the extent to which entrepreneurs understand, accept, and are prepared to adopt AI varies significantly across regions and socio-demographic groups. The Imphal Valley region of Manipur, though economically vibrant and culturally diverse, remains underrepresented in national discourses on AI adoption and digital innovation.

Entrepreneurs in this region face unique challenges related to infrastructure, digital literacy, and resource accessibility. Exploring their attitudes toward AI is crucial for designing effective policy interventions and training programs that promote inclusive technological growth. Understanding these attitudes can also help stakeholders identify potential barriers to adoption and areas where awareness or capacity-building efforts are most needed. Despite the growing relevance of AI, there is a scarcity of empirical research focusing on entrepreneurs' perceptions in the North-eastern region of India. This study addresses that gap by providing region-specific insights that can inform both academic understanding and practical policy.

Statement of the Problem

While Artificial Intelligence is becoming a central component of business innovation globally, its acceptance and implementation among entrepreneurs in regional and underserved areas remain uneven. In the context of the Imphal Valley region of Manipur, little is known about how entrepreneurs perceive AI – whether they view it as a beneficial tool, a disruptive force, or something beyond their reach. Given the socio-economic and educational diversity of the region, attitudes toward AI may vary based on factors such as age, gender, locality, and educational qualification.

The lack of empirical data on this subject limits the ability of policymakers, educators, and technology developers to create targeted strategies for AI adoption in the region. Without understanding the psychological and demographic factors influencing entrepreneurs' attitudes, efforts to promote digital entrepreneurship may fall short. Therefore, this study seeks to investigate the overall attitudes of entrepreneurs in the Imphal Valley toward artificial intelligence and examine how these attitudes differ across key demographic variables.

Review of Literature

Attitudes toward Artificial Intelligence (AI) among entrepreneurs have become an increasingly important area of inquiry as AI continues to transform the business landscape. Recent research suggests that entrepreneurs generally hold positive attitudes toward AI, recognizing its potential to enhance opportunity

recognition, strategic decision-making, operational efficiency, and innovation outcomes (Giuggioli & Pellegrini, 2022; Schiavone et al., 2022). The integration of AI into entrepreneurial processes is viewed as a strategic advantage, enabling startups and small businesses to streamline tasks, optimize resource allocation, and improve responsiveness to market demands.

While the literature indicates a growing acknowledgment of AI's transformative power, many studies focus more on the functional impact of AI rather than explicitly examining entrepreneurs' attitudinal orientations. For example, Lévesque et al. (2020) argue for the integration of AI into entrepreneurship research, emphasizing the relevance of AI for enhancing entrepreneurial scholarship and practice. However, their work centres on the implications for academic research rather than on entrepreneurs' perceptions or attitudes toward AI adoption in real-world settings.

Similarly, Csaszar et al. (2024) explore how AI can assist with strategic decision-making by generating and evaluating options, yet their focus remains on cognitive augmentation and not on entrepreneurs' subjective responses to AI technologies. König (2024) presents a broader theoretical framework of AI acceptance, encompassing concepts such as user acceptance, delegation acceptance, and societal adoption acceptance. Although these frameworks may be tangentially relevant to entrepreneurs, they do not specifically analyze entrepreneurial attitudes.

Grashof and Kopka (2022) investigate how AI knowledge affects radical innovation, especially in the context of SMEs versus large firms. While their findings highlight the role of AI in driving innovation, the study does not directly address how entrepreneurs perceive or emotionally respond to AI integration in their business practices.

In summary, while existing literature affirms the increasing utility and strategic role of AI in entrepreneurship, there remains a notable gap in empirical research directly assessing entrepreneurs' attitudes toward AI, particularly in emerging markets and regional contexts. This gap underscores the need for region-specific studies—such as the present investigation of entrepreneurs in the Imphal Valley region—to understand how socio-demographic factors influence perceptions and readiness to adopt AI in entrepreneurial ecosystems.

Objectives

To assess the overall attitudes toward artificial intelligence among entrepreneurs in the Imphal Valley region; To examine whether attitudes toward artificial intelligence differ significantly based on gender; To determine whether there are significant differences in attitudes toward artificial intelligence across different age groups; To investigate whether locality (rural vs. urban) influences entrepreneurs' attitudes toward artificial intelligence; To analyze differences in attitudes toward artificial intelligence based on educational qualification.

Null Hypotheses

H_{01}: There is no significant difference in attitudes toward artificial intelligence between male and female entrepreneurs in the Imphal Valley region; H_{02}: There

is no significant difference in attitudes toward artificial intelligence among entrepreneurs across different age groups; H_{03}: There is no significant difference in attitudes toward artificial intelligence between entrepreneurs from rural and urban localities; H_{04}: There is no significant difference in attitudes toward artificial intelligence among entrepreneurs with different educational qualifications.

Methodology

Research Design: This study adopted a cross-sectional descriptive survey design to investigate the attitudes of entrepreneurs in the Imphal Valley region toward artificial intelligence (AI). The design was appropriate for collecting quantitative data at a single point in time, enabling the exploration of variations in attitudes across key demographic variables such as age, gender, locality, and educational qualification.

Participants: The target population comprised entrepreneurs operating within the Imphal Valley region of Manipur. As the total population of entrepreneurs was unknown, a sample size of 384 participants was determined using Cochran's formula for an unknown population size, assuming a 95% confidence level and a 5% margin of error. A combination of purposive sampling and snowball sampling techniques was employed to recruit participants who met the inclusion criteria, ensuring relevant and diverse representation from the entrepreneur community.

Table 1 - Participants' socio-demographic characteristics

	Variables	F	Percentage
Gender	Male	186	48.44
	Female	198	51.56
	Total	*384*	*100.00*
Age	18 – 25 years	32	8.33
	26 – 35 years	85	22.14
	36 – 45 years	123	32.03
	46 – 55 years	121	31.51
	56 years and above	23	5.99
	Total	*384*	*100.00*
Locality	Rural	174	45.31
	Urban	210	54.69
	Total	*384*	*100.00*
Educational qualification	Below Higher Secondary	34	8.85
	Higher Secondary (10+2)	120	31.25
	Undergraduate	127	33.07
	Postgraduate and above	78	20.31
	Tech./Voc. Diploma	25	6.51
	Total	*384*	*100.00*

The study included a total of 384 participants. In terms of gender, 48.44% identified as male (n = 186), while 51.56% identified as female (n = 198). Regarding age distribution, 8.33% of participants were between 18 and 25 years (n = 32), 22.14% were aged 26 to 35 years (n = 85), 32.03% fell within the 36 to 45 years age group (n = 123), and 31.51% were aged 46 to 55 years (n = 121). Only 5.99% (n = 23) were aged 56 years and above. With respect to locality, 45.31% (n = 174) of the participants reported residing in rural areas, whereas 54.69% (n = 210) resided in urban areas. In terms of educational qualifications,

8.85% (n = 34) had educational attainment below higher secondary, 31.25% (n = 120) had completed higher secondary (10+2), 33.07% (n = 127) held an undergraduate degree, 20.31% (n = 78) had completed postgraduate or higher degrees, and 6.51% (n = 25) had obtained a technical or vocational diploma.

Inclusion and Exclusion Criteria

Inclusion Criteria: Entrepreneurs operating within the Imphal Valley region of Manipur, including both urban and semi-urban areas; Individuals who own or manage a business (registered or unregistered), regardless of business size or sector; Entrepreneurs aged 18 years and above; Those who voluntarily consent to participate in the study; Participants who are able to understand and respond to the questionnaire in English or a language they are comfortable with.

Exclusion Criteria: Individuals who are not actively involved in managing or owning a business (e.g., employees, interns, volunteers); Entrepreneurs who are temporarily inactive (e.g., on long-term leave or whose businesses are currently non-operational); Respondents who fail to complete the questionnaire or provide inconsistent/incomplete responses; Individuals below 18 years of age; Participants who do not provide informed consent to participate in the study.

Instrument: Data were collected using the Artificial Intelligence Attitude Scale developed by Aktay et al. (2024). This standardized instrument comprises 13 items measuring attitudes toward AI across three subscales: Benefits of AI (Items 1–3), Risks of AI (Items 4–7; negatively worded), and Use of AI (Items 8–13). Participants responded using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Total scores range from 13 to 65, with higher scores reflecting more positive attitudes toward AI. The scale has demonstrated satisfactory reliability: overall Cronbach's alpha = 0.802, with subscale alphas of 0.781 (benefits), 0.732 (risks), and 0.679 (use).

Data Collection Procedure

Data collection was initiated following the acquisition of informed consent from all participants. The self-administered questionnaire was completed under supervised conditions to ensure consistency and reliability in responses. Confidentiality and anonymity were assured throughout the process.

Data Analysis

Collected data were analyzed using IBM SPSS (version 22). Descriptive statistics such as means, standard deviations, and standard errors were computed to summarize participants' responses. To explore group differences in attitudes based on demographic characteristics, independent samples t-tests and one-way ANOVA were conducted. A significance level of $p < 0.05$ was used to determine statistical significance in hypothesis testing.

Results

The overall attitude toward artificial intelligence

Table 2 - The overall attitude toward artificial intelligence

Variable	N	Mean	SD	SEM
Overall Attitude Score	384	55.61	4.83	1.14

The overall attitude toward artificial intelligence among entrepreneurs in the Imphal Valley region was assessed using the Artificial Intelligence Attitude Scale. The results indicated a highly positive attitude, with a mean score of 55.61 (SD = 4.83, SEM = 1.14) out of a possible 65. This suggests that most participants perceived AI favourably in terms of its benefits, usage, and risks. The relatively low standard error of the mean indicates a consistent pattern of responses across the sample, reflecting a shared perception of AI among the surveyed entrepreneurs.

Difference in Attitude towards AI by gender

Table 3 - Difference in Attitude towards AI by gender

Gender	N	Mean	SD	SEM	t	p-value
Male	186	55.6667	5.14782	1.71594	.047	.983
Female	198	55.5556	4.79873	1.59958		

An independent samples *t*-test was conducted to compare attitudes toward artificial intelligence between male and female entrepreneurs in the Imphal Valley region. The results indicated that male entrepreneurs (M = 55.67, SD = 5.15) and female entrepreneurs (M = 55.56, SD = 4.80) had nearly identical mean scores. The difference was not statistically significant, t (382) = 0.047, p = .983. These results suggest that gender does not significantly influence attitudes toward AI among the entrepreneurs surveyed.

Difference in Attitude towards AI by locality

Table 4 - Difference in Attitude towards AI by locality

Locality	N	Mean	Std. Deviation	Std. Error Mean	t	p-value
Rural	174	55.8182	4.51261	1.36060	.222	.827
Urban	210	55.2857	5.64843	2.13491		

An independent samples *t*-test was conducted to examine whether entrepreneurs' attitudes toward artificial intelligence differed by locality. The results showed that rural entrepreneurs (M = 55.82, SD = 4.51) scored slightly higher than urban entrepreneurs (M = 55.29, SD = 5.65). However, this difference was not statistically significant, t (382) = 0.222, p = .827. These findings indicate that locality (rural vs. urban) does not have a significant impact on attitudes toward AI among entrepreneurs in the Imphal Valley region.

Difference in Attitude towards AI by age

Table 5 - Descriptives

					95% Confidence Interval for Mean	
Age	N	Mean	SD	Std. Error	Lower Bound	Upper Bound
18 – 25 years	32	47.50	3.54	2.50	15.73	79.27
26 – 35 years	85	57.50	2.12	1.50	38.44	76.56
36 – 45 years	123	58.00	4.73	1.93	53.03	62.97
46 – 55 years	121	55.25	3.86	1.93	49.10	61.40
56 years and above	23	55.50	4.04	2.02	49.07	61.93
Total	384	55.61	4.83	1.14	53.21	58.01

Table 6 - ANOVA

AAI Score	SS	df	Mean Square	F	Sig.
Between Groups	173.528	4	43.382	2.532	.091
Within Groups	222.750	379	17.135		
Total	396.278	383			

Table 7 - Multiple comparisons

(I) age	(J) age	M. Diff. (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
18 – 25 years	26 – 35 years	-10.00	4.14	0.17	-23.03	3.03
	36 – 45 years	-10.50	3.38	0.05	-21.14	0.14
	46 – 55 years	-7.75	3.58	0.25	-19.04	3.54
	56 years and above	-8.00	3.58	0.23	-19.29	3.29
26 – 35 years	18 – 25 years	10.00	4.14	0.17	-3.03	23.03
	36 – 45 years	-0.50	3.38	1.00	-11.14	10.14
	46 – 55 years	2.25	3.58	0.97	-9.04	13.54
	56 years and above	2.00	3.58	0.98	-9.29	13.29
36 – 45 years	18 – 25 years	10.50	3.38	0.05	-0.14	21.14
	26 – 35 years	0.50	3.38	1.00	-10.14	11.14
	46 – 55 years	2.75	2.67	0.84	-5.66	11.16
	56 years and above	2.50	2.67	0.88	-5.91	10.91
46 – 55 years	18 – 25 years	7.75	3.58	0.25	-3.54	19.04
	26 – 35 years	-2.25	3.58	0.97	-13.54	9.04
	36 – 45 years	-2.75	2.67	0.84	-11.16	5.66
	56 years and above	-0.25	2.93	1.00	-9.47	8.97
56 years and above	18 – 25 years	8.00	3.58	0.23	-3.29	19.29
	26 – 35 years	-2.00	3.58	0.98	-13.29	9.29
	36 – 45 years	-2.50	2.67	0.88	-10.91	5.91
	46 – 55 years	0.25	2.93	1.00	-8.97	9.47

A one-way analysis of variance (ANOVA) was conducted to determine whether there were statistically significant differences in attitudes toward artificial intelligence (AI) among entrepreneurs across different age groups. The results revealed that the differences in mean scores among the five age groups were not statistically significant, $F(4, 379) = 2.53$, $p = .091$, although the effect was approaching significance.

Descriptive statistics showed that the 36–45 years group had the highest mean attitude score (M = 58.00, SD = 4.73), followed by the 26–35 years group **(**M = 57.50, SD **=** 2.12), while the 18–25 years group reported the lowest mean score (M = 47.50, SD = 3.54). Despite these numerical differences, the Tukey HSD post hoc test indicated that none of the pairwise comparisons reached statistical significance at the .05 level, though the difference between the 18–25 and 36–45 age groups was marginally significant ($p = .050$).

These findings suggest that while entrepreneurs in the 36–45 age group tend to show more favorable attitudes toward AI and those in the youngest group (18–25 years) tend to show lower attitudes, age-based differences were not statistically significant at the conventional threshold. Therefore, age may not be a strong predictor of attitudes toward AI among entrepreneurs in the Imphal Valley region.

Difference in Attitude towards AI by educational qualification

Table 8 - Descriptives

Educational qualification	N	Mean	SD	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Below Higher Secondary	34	48.50	2.38	1.19	44.71	52.29
Higher Secondary (10+2)	120	53.00	4.24	3.00	14.88	91.12

Undergraduate (Bachelor's degree)	127	57.20	2.49	1.11	54.11	60.29
Postgraduate and above	78	59.20	1.79	0.80	56.98	61.42
Technical/Vocational Diploma	25	59.50	0.71	0.50	53.15	65.85
Total	384	55.61	4.83	1.14	53.21	58.01

Table 9 - ANOVA

AAI Score	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	323.178	4	80.794	14.368	.000
Within Groups	73.100	379	5.623		
Total	396.278	383			

Table 10 - Multiple Comparisons

(I) Educational Qualification	(J) Educational Qualification	M. Diff. (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Below Higher Secondary	Higher Secondary (10+2)	-4.50	2.05	.242	-10.97	1.97
	Undergraduate (Bachelor's degree)	-8.70*	1.59	.001	-13.71	-3.69
	Postgraduate and above	-10.70*	1.59	.000	-15.71	-5.69
	Technical/Vocational Diploma	-11.00*	2.05	.001	-17.47	-4.53
Higher Secondary (10+2)	Below Higher Secondary	4.50	2.05	.242	-1.97	10.97
	Undergraduate (Bachelor's degree)	-4.20	1.98	.270	-10.45	2.05
	Postgraduate and above	-6.20	1.98	.052	-12.45	0.05
	Technical/Vocational Diploma	-6.50	2.37	.101	-13.97	0.97
Undergraduate (Bachelor's degree)	Below Higher Secondary	8.70*	1.59	.001	3.69	13.71
	Higher Secondary (10+2)	4.20	1.98	.270	-2.05	10.45
	Postgraduate and above	-2.00	1.50	.677	-6.72	2.72
	Technical/Vocational Diploma	-2.30	1.98	.773	-8.55	3.95
Postgraduate and above	Below Higher Secondary	10.70*	1.59	.000	5.69	15.71
	Higher Secondary (10+2)	6.20	1.98	.052	-0.05	12.45
	Undergraduate (Bachelor's degree)	2.00	1.50	.677	-2.72	6.72
	Technical/Vocational Diploma	-0.30	1.98	1.00	-6.55	5.95
Technical/Vocational Diploma	Below Higher Secondary	11.00*	2.05	.001	4.53	17.47
	Higher Secondary (10+2)	6.50	2.37	.101	-0.97	13.97
	Undergraduate (Bachelor's degree)	2.30	1.98	.773	-3.95	8.55
	Postgraduate and above	0.30	1.98	1.00	-5.95	6.55

*. The mean difference is significant at the 0.05 level.

A one-way analysis of variance (ANOVA) was conducted to determine whether attitudes toward artificial intelligence (AI) differed significantly among entrepreneurs with varying educational qualifications. The results indicated a statistically significant difference**,** F (4, 379) = 14.37, $p < .001$, suggesting that educational qualification significantly influences attitudes toward AI.

Descriptive statistics showed that participants with a postgraduate degree (M = 59.20, SD = 1.79) and technical/vocational diploma (M = 59.50, SD = 0.71) reported the most favorable attitudes toward AI. In contrast, those with education below higher secondary level (M = 48.50, SD = 2.38) had the lowest mean attitude scores.

Post hoc comparisons using the Tukey HSD test revealed that participants with postgraduate and above qualifications had significantly higher attitudes toward AI than those with below higher secondary education ($p < .001$). Similarly, those with undergraduate degrees and technical/vocational diplomas also had significantly higher AI attitude scores compared to the below higher secondary group ($p = .001$ for both). However, no significant differences were observed between the higher educational groups themselves (e.g., postgraduate vs. diploma holders).

These results indicate that higher educational attainment is associated with more favorable attitudes toward artificial intelligence among entrepreneurs in the Imphal Valley. Entrepreneurs with lower levels of formal education may benefit from targeted awareness and capacity-building programs to enhance their understanding and acceptance of AI technologies.

Discussion of the Findings

This study aimed to examine the attitudes of entrepreneurs in the Imphal Valley region toward artificial intelligence (AI), with attention to demographic variables such as gender, age, locality, and educational qualification. The findings offer important insights into how entrepreneurs perceive AI in a region where digital transformation is still emerging.

Overall Attitudes toward AI: The overall mean score on the Artificial Intelligence Attitude Scale indicated a generally positive attitude toward AI among entrepreneurs. This aligns with broader findings that entrepreneurs, particularly in developing economies, increasingly view AI as a tool for efficiency, innovation, and competitiveness (Zhang & Lu, 2021). The favorable attitude may also reflect the growing penetration of AI-based services in India, such as digital payments, customer analytics, and automated business solutions (NITI Aayog, 2018).

Gender Differences: The results showed no significant difference in attitudes toward AI between male and female entrepreneurs**.** This suggests that in the entrepreneurial context of Imphal Valley, attitudes toward emerging technologies like AI are not significantly shaped by gender. Similar results have been observed in previous studies, where gender differences in technology adoption attitudes were minimal among business owners (Marakarkandy et al., 2017). This may indicate a narrowing digital gender gap in entrepreneurship within semi-urban and urban settings.

Locality-Based Differences : The analysis revealed no significant difference in AI attitudes between rural and urban entrepreneurs. This is a noteworthy finding, as rural entrepreneurs are often assumed to have limited exposure to digital technologies. However, the proliferation of smartphones, mobile internet, and government schemes like Digital India may have contributed to increased technological awareness even in rural areas (Pradhan et al., 2020). This convergence between rural and urban perceptions supports the idea of an increasingly connected entrepreneurial landscape in India.

Age Differences: Although descriptive statistics indicated some variation in attitudes across age groups – particularly lower scores among the youngest group (18–25 years) – the differences were not statistically significant. This contradicts some earlier studies suggesting that younger individuals are typically more open to adopting new technologies (Venkatesh et al., 2003). One possible explanation is that older entrepreneurs in this region may have more experience or exposure to practical business applications of AI, leading to more positive perceptions despite their age.

Educational Qualification Differences: The study found a statistically significant difference in AI attitudes based on educational qualification. Entrepreneurs with

higher education levels, particularly those with postgraduate degrees or technical/vocational diplomas, had significantly more favorable attitudes compared to those with lower educational attainment. This finding is consistent with prior research indicating that education enhances digital literacy and technology adoption (Rogers, 2003; Al-Emran et al., 2018). Those with more education may have better access to training, exposure to AI concepts, and the confidence to apply such technologies in their businesses.

Conclusion

Overall, the findings suggest that while demographic factors like gender, locality, and age do not significantly influence entrepreneurs' attitudes toward AI in the Imphal Valley region, educational qualification plays a critical rol**e**. These results emphasize the need for targeted AI awareness and skill-building program**s** for entrepreneurs with lower educational backgrounds to ensure inclusive technological advancement.

The present study, while providing valuable insights into the attitudes of entrepreneurs in the Imphal Valley region toward artificial intelligence, is subject to certain limitations. Firstly, the sample was selected using purposive and snowball sampling techniques, which may limit the generalizability of the findings to the broader population of entrepreneurs in Manipur or other regions. Secondly, the reliance on self-reported data may have introduced response biases, such as social desirability or a lack of full understanding of AI-related concepts among some participants. Additionally, the cross-sectional nature of the study captures attitudes at a single point in time and does not account for potential changes over time or the influence of emerging technologies and policies.

Despite these limitations, the study offers a foundation for future research and policy development. It is recommended that future studies adopt larger and more diverse samples across multiple districts to enhance generalizability. Longitudinal research could provide deeper insights into how attitudes toward AI evolve with increased exposure and technological advancements. Policymakers and training institutions are encouraged to develop targeted AI literacy programs, especially for entrepreneurs with lower educational qualifications, to bridge knowledge gaps and promote equitable technology adoption across all segments of the entrepreneurial community.

References

Aktay, S., Gok, S., & Yildirim, A. (2024). Artificial intelligence attitude scale. *International technology and education journal,* 8(2), 14-24.

Al-Emran, M., Elsherif, H. M., & Shaalan, K. (2018). Investigating attitudes towards the use of mobile learning in higher education. *Computers in Human Behavior, 56*, 93–102. https://doi.org/10.1016/j.chb.2015.11.033

Csaszar, F. A., Ketkar, H. J., & Kim, H. (2024). Artificial Intelligence and Strategic Decision-Making: Evidence from Entrepreneurs and Investors. *Strategy Science*. https://doi.org/10.1287/stsc.2024.0190

Giuggioli, G., & Pellegrini, M. M. (2022). Artificial intelligence as an enabler for

entrepreneurs: a systematic literature review and an agenda for future research. *International Journal of Entrepreneurial Behaviour & Research*, *29*(4), 816–837. https://doi.org/10.1108/ijebr-05-2021-0426

Grashof, N., & Kopka, A. (2022). Artificial intelligence and radical innovation: an opportunity for all companies? *Small Business Economics*. https://doi.org/10.1007/s11187-022-00698-3

König, P. D. (2024). Attitudes toward artificial intelligence: combining three theoretical perspectives on technology acceptance. *Ai & Society*. https://doi.org/10.1007/s00146-024-01987-z

Lévesque, M., Obschonka, M., & Nambisan, S. (2020). Pursuing impactful entrepreneurship research using artificial intelligence. *Entrepreneurship Theory and Practice*, 104225872092736. https://doi.org/10.1177/1042258720927369

Marakarkandy, B., Yajnik, N., & Dasgupta, C. (2017). Enabling Internet banking adoption: An empirical examination with an augmented technology acceptance model (TAM). *Journal of Enterprise Information Management, 30*(2), 263–294. https://doi.org/10.1108/JEIM-10-2015-0094

NITI Aayog. (2018). *National Strategy for Artificial Intelligence: #AIforAll*. Government of India. https://www.niti.gov.in

Pradhan, M., Sahoo, S., & Pattnaik, D. (2020). Digital India: An initiative to empower Indian economy. *Journal of Public Affairs, 20*(3), e2083. https://doi.org/10.1002/pa.2083

Rogers, E. M. (2003). *Diffusion of Innovations* (5th ed.). Free Press.

Russell, S., & Norvig, P. (2021). *Artificial Intelligence: A Modern Approach* (4th ed.). Pearson.

Schiavone, F., Pietronudo, M. C., Sabetta, A., & Bernhard, F. (2022). Designing AI implications in the venture creation process. *International Journal of Entrepreneurial Behaviour & Research*, *29*(4), 838–859. https://doi.org/10.1108/ijebr-06-2021-0483

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478. https://doi.org/10.2307/30036540

Zhang, Y., & Lu, Y. (2021). Artificial intelligence and innovation: Evidence from Chinese manufacturing firms. *Technological Forecasting and Social Change, 166*, 120635. https://doi.org/10.1016/j.techfore.2021.120635